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The Role of Meaning Making in Expressive Writing and Adults with Post Traumatic Stress
Disorder: A Literature Review.

Leah Rose

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The Role of Meaning Making in Expressive Writing and Adults with Post Traumatic Stress Disorder: A literature Review.

Introduction

Posttraumatic Stress Disorder

While not everyone who experiences a traumatic event will develop posttraumatic stress disorder, it is not uncommon for trauma survivors to experience serious psychological symptoms because of what they have been through. According to the American Psychiatric Association (2017) “posttraumatic stress disorder (PTSD) is a psychiatric disorder that can occur in people who have experienced or witnessed a traumatic event such as a natural disaster, a serious accident, a terrorist act, war/combat, rape or other personal violent assault” (para. 1). Some of the symptoms of PTSD include flashbacks and nightmares, avoidance of any potential triggers that may remind you of the traumatic event, hyperarousal and difficulty concentrating, and feelings of guilt, blame, and alienation (Mastroianni, 2018, para. 9-12).

Expressive Writing and Healing from Trauma

Expressive writing, which is when a client writes about a traumatic or stressful event to try and better understand the emotions associated with it, as well as try and make sense and meaning of whatever happened to them, has been found to be an effective method for treating PTSD-related symptoms. Pennebaker (1986) was the first person to discover “[the] connection between expressive writing and wellness” (Evans, 2012, para. 4). Both physiological and psychological changes have been observed in trauma survivors with PTSD after participating in an expressive writing intervention (Sheerin, Konig, Eonta, & Vrana, 2018; Hirai, Skidmore, Clum, & Dolma, 2012). Studies have also shown that there is a connection between expressive writing and “improved mood, reduced health center visits, improved immune system functioning, reduced

high blood pressure and cholesterol, reduced symptoms of depression and anxiety, reduced trauma-related intrusion and avoidance symptoms and reduced symptoms of post-traumatic stress disorder” (Farber, 2016, para. 3).

Expressive Arts and Meaning-Making

As with any form of expressive art, part of the reason why expressive writing can help people to both grow and heal is because “the product created in the art process can be a symbolic reminder of newfound strength or meaning that the client can integrate into his world as a resource” (Richardson, 2016, p. 7). For this reason, engaging in the expressive arts can facilitate the meaning-making process, which, according to Gan and colleagues (2018), is a process used to “[integrate] the appraised meaning of a traumatic event into one’s global belief system to reduce cognitive discrepancy” (p. 594). These cognitive discrepancies can sometimes result in cognitive dissonance, which is a theory that was first proposed by social psychologist Leon Festinger (1957). Cognitive dissonance occurs when a person’s thoughts and actions do not align, resulting in psychological distress. Festinger gives the example of a smoker who learns about the negative health effects of smoking. To reduce the cognitive dissonance he feels, the smoker must either stop smoking, or convince themselves that smoking is not actually bad for him, so that his thoughts and actions will be in alignment again.

Along with reducing possible feelings of cognitive dissonance, another explanation for why this integration of meaning into one’s global beliefs is such a critical part of healing from trauma is because meaning “plays an essential role in how individuals deal with a situation of crisis or illness, influencing their adjustment and... even their survival” (Park, 2014, p. 41). Social] psychologist Janoff-Bulman (1989) believes this is because trauma survivors, in order to cope with all that they’ve been through, must take on the cognitive task of assimilating their

experience and/or changing their basic schemas about both them and their world, which can sometimes result in cognitive strategies such as self-blame, denial, and intrusive, recurrent thoughts.

Meaning Making and Healing from Trauma

Several studies have been conducted over the years that speak to the relationship between meaning making and healing from traumatic events. Several phenomenological studies, for example, have found that reconstructing a trauma narrative and engaging in various meaning-making processes can have a significant impact on the way that people heal from and cope with traumatic events (Uy & Okubo, 2018; Freda & Martino, 2014). Other arts-based research studies seem to indicate that engaging in the meaning-making process can help those with PTSD to better understand what emotional responses they are having as a result of the traumatic events that they experienced (Iida, 2018).

PTSD, which is developed after undergoing a traumatic event, can result in emotional, psychological and physiological changes that can negatively affect survivors. Engaging in the meaning-making process and participating in expressive arts interventions such as expressive writing has been found to be particularly effective in helping clients to heal after a traumatic event. For this reason, it is suggested that expressive writing be utilized when counseling clients with PTSD, and the relationship between expressive writing, PTSD, and the meaning-making process be explored further.

Literature Review

Psychologists have only recently begun to tap into the emotional, psychological, and physiological effects that expressive writing can have on survivors of traumatic events. Meanwhile, the benefits of expressive writing, along with similar forms of written emotional disclosure, have been studied for several decades now. The connection between expressive writing, the meaning-making process, and healing from trauma, as well as the physiological and psychological reasons behind these changes, has also been explored.

Trauma and PTSD

A 2017 World Mental Health Survey, which was conducted by the World Health Organization (WHO) and collected data from nearly 70,000 participants in 24 countries, found that approximately 70 percent of respondents had experienced a traumatic event (Kessler et al., 2017). Although all instances of trauma and PTSD are a result of witnessing or experiencing a traumatic event, the nature of the traumatic event can cause survivors to respond in a number of different ways. Seminal trauma researchers have worked to identify and define the various types of trauma that exist. Lenore Terr (1991), for example, distinguished between Type I trauma, which is caused by a single, catastrophic event, and Type II trauma, which is the result of a repeated experience of or prolonged exposure to a traumatic event. In some circumstances, such as when a loved one dies unexpectedly, the symptoms of Types I and II trauma can be experienced at the same time. Terr also posits that the nature, length, and frequency of a trauma can affect the severity of the symptoms that survivors develop.

Complex trauma, which was first suggested as a diagnosis by Judith Herman (1992), addresses “the multiple origins of trauma and their impact on all aspects of a person’s life” (Ringel & Brandell, 2011, p. 6). Van der Kolk (2005), who has studied developmental trauma

extensively, defines complex trauma as “multiple, chronic and prolonged, developmentally adverse traumatic events, most often of an interpersonal nature (e.g. sexual or physical abuse, war, community violence) and early-life onset” (p. 402). The age at which a traumatic event takes place also plays a role in defining what type it is. Childhood abuse and neglect, for example, would be considered developmental trauma instead of simply complex trauma, as abuse in adulthood would be categorized. Despite these many and subtle differences, however, there are some symptoms that almost all survivors with PTSD will experience, such as “visualized or otherwise repeatedly perceived memories of the traumatic event, repetitive behaviors, trauma-specific fears, and changed attitudes about people, life, and the future” (Terr, 1991, p. 10).

Trauma and Meaning-Making

One phenomenon that has been found to be effective in helping survivors to heal from traumatic events is meaning-making. Meaning-making, according to researchers Park and Blumberg (2002), is defined as “changing situational meaning (appraisals of the traumatic experience) and global meaning (world views, personality, and coping styles) in order to reduce the discrepancy between global and situational meaning” (Park & Blumberg, 2002, p. 597).

What this means in the context of expressive writing is that expressive writing can help clients to make sense of what has happened to them after a traumatic event. This is important because, in order to cope, trauma survivors must change or assimilate their basic beliefs, which can sometimes be a source of cognitive distress.

This theory is also supported by the beliefs of Austrian psychiatrist Victor Frankl, who spent time in a concentration camp in Nazi Germany (Steger & Park, 2012). Frankl emphasized “the profound role that meaning-making plays in sustaining psychological welfare in the face of

adversity and trauma” (Steger & Park, 2012, p. 171). The psychological resilience that is associated with the meaning-making process and, consequently, the expressive writing paradigm, would help to explain why expressive writing can be beneficial for those who have experienced a traumatic event.

Fight, Flight, or Freeze Response

Another phenomenon associated with the overcoming of traumatic events is the fight, flight, or freeze response. This refers to the three different ways of responding when presented with a stimulus that is potentially threatening. These three ways of responding are to either fight, meaning the stimulus will be confronted, to flee from the stimulus, or to simply freeze and do nothing. Although it is now commonly referred to as the fight, flight, or freeze response, the “freeze” portion of it was not always recognized as being a part of this response. The term “fight-or-flight response”, which is also known as the acute stress response, was first coined by physiologist Walter Bradford Cannon (1915). While there are obvious benefits to both the fight and flight aspects of this response, there have been found to be potentially harmful effects of “freezing” during a stressful situation.

Excess Cortisol and Mental Illness

It is possible to understand several forms of anxiety, such as phobias, panic attacks, and obsessive-compulsive behaviors, as symptoms of a freeze response that were never resolved (Seltzer, 2015). Not only this, but unrectified trauma is also believed to be directly related to the development of posttraumatic stress disorder. This is thought to be associated with excess levels of cortisol, which a traumatic process can create and store in the body. Several research studies have shown, for instance, that high levels of cortisol, as measured by urinary and hair cortisol levels, have been linked to the later development of PTSD (Delahanty et al., 2005; Pacella et al.,

2017). Thankfully, however, expressive writing interventions can be helpful in rectifying these types of unresolved trauma (Lepore et al., 2002).

Excess Cortisol and Physical Illness

An excess of cortisol can result in not only mental illnesses, such as posttraumatic stress disorder, but a variety of physical illnesses as well. When the cortisol created during a stressful event is not released but instead stored in the body, a person can experience serious or even life-threatening ailments. For example, research has shown that higher levels of cortisol are associated with an increased risk of type 2 diabetes, hair cortisol levels have been found to be positively correlated with obesity and BMI, and higher baseline levels of cerebrospinal fluid cortisol is associated with faster disease progression and cognitive decline in those with Alzheimer's Disease (Ortiz et al., 2019; Jackson & Steptoe, 2018; Popp et al., 2015). In addition to this, Schrepf and colleagues (2015) examined salivary cortisol levels in patients with epithelial ovarian cancer and found that “a one standard deviation increase in... cortisol was associated with a 46% greater likelihood of [dying from cancer]” (p. 256). A release of the cortisol being stored in the body after a trauma, as well as the subsequent reduction in disease risk and progression, could potentially explain why expressive writing can result in physical health benefits and fewer visits to the health center (Pennebaker & Beall, 1986).

Habituation

In instances where a trauma has not been rectified, “the original fear or panic linked to [a trauma suffered years ago] compels you to react to the current-day trigger as though what happened in the past is... happening all over again” (Seltzer, 2015, para. 12). What this means is that, because an association has been made between a certain trigger and a traumatic event, when a person is presented with said trigger, their body responds as if they were currently in grave

danger. One possible way of decoupling these types of powerful associations made by trauma survivors is through habituation, which is one of the many benefits of engaging in the expressive therapies (Lepore et al., 2002).

According to Lepore and colleagues (2002), there are two separate types of habituation: stimulus-related habituation and response-related habituation. While both forms of habituation result in a decrease in emotional reactivity, the two differ in that stimulus-related habituation is due to prolonged exposure to the stimulus itself, and response-related habituation is caused by prolonged or intense exposure to the fear responses that the stimulus provokes. When writing about stressful events, people tend to describe elements of their experience, such as the scenery or those involved, along with their emotional, physical, and psychological reactions to the event taking place. Recalling in detail this stressful event can often evoke negative emotions in people. For these reasons, the authors believe that “expressive writing should facilitate both stimulus- and response-related habituation” (Lepore et al., 2002, p. 105). This could potentially explain why an initial negative arousal pattern has been observed immediately following the completion of an expressive writing intervention, as well as some of the long-term health benefits that expressive writing can result in (Pennebaker, 1986).

Cognitive Behavioral Therapy and Habituation

This process of habituation is frequently used in the field of cognitive behavioral therapy (CBT), which was pioneered by Aaron Beck in the 1960s and has been found to be particularly effective in treating anxiety-related disorders such as PTSD and specific phobias (Heller & Northcut, 2011). Anxiety, according to cognitive behavioral therapists, “is the result of overestimating a threat or the individual underestimating their own capacity to deal with that threat” (Mann & Whitfield, 2009, p. 25). In the context of PTSD, this would mean that the

perceived threat- namely, a triggering stimulus somehow related to the traumatic event- causes a person's body to respond as if they are in some kind of danger. They are therefore giving power to a stimulus that, when not a result of a conditioned fear, would seem harmless to them. One technique used in CBT that aims to cause habituation and therefore cure a person's fears is exposure, which is used in the treatment of anxiety disorders and "involves exposing the individual to the object or set of circumstances that causes them to be afraid" (Mann & Whitfield, 2009, p. 25). If a client were afraid of spiders, for example, the therapist would slowly expose them to spider related words, images, and objects, until eventually, the client was exposed to the spider itself. The ultimate goal in a session like this would be to condition the client to not have such a strong emotional or physical reaction to a stimulus, due to the fact that they are no longer overestimating the threat or underestimating their ability to deal with it.

Systematic Desensitization

Similar to the habituation practices employed by cognitive behavioral therapists, those in the field of behavioral psychology use a process called systematic desensitization- also referred to as counterconditioning- to reduce anxieties related to the presence of a certain stimulus (Bootzin, 1975). Ultimately, the goal of systematic desensitization is to "weaken the association between certain environmental cues and the patient's responses of anxiety" (Bootzin, 1975, p. 79-80). Systematic desensitization differs from habituation in that systematic desensitization involves not only reducing the negative feelings associated with it, but also conditioning the client to associate the previously negative stimulus with positive feelings. Counterconditioning can be achieved "by repeatedly exposing the patient to fear-evoking cues under conditions which prevent the arousal of anxiety" (Bootzin, 1975, p. 80).

This added element of having the client feel relaxed in the presence of the previously negative stimulus is important because while both exposure therapy and counterconditioning can lead to habituation, counterconditioning is more effective at reducing the negative feelings associated with a previously conditioned stimulus, which can remain even after extinction (Gast & De Houwer, 2013; Engelhard et al., 2014). Kang and colleagues (2018) posit that because exposure therapy does not reduce the learned negative associations that the client has developed towards the previously conditioned stimulus, the threat expectancy, as well as the feelings of fear associated with it, are more likely to return. This could potentially explain why relapse is so common when healing not only from PTSD, but also mental illnesses in general.

Expressive Arts Therapy

While healing from trauma can be an arduous and sometimes lifelong journey, the expressive therapies, in addition to traditional psychotherapy and, if necessary, psychotropic medications, can be used to help survivors with PTSD to heal, grow, and, ultimately, overcome the hardships that they have faced. Expressive therapy, according to Malchiodi (2005) is defined as “the use of art, music, dance/movement, drama, poetry/creative writing, play, and sandtray within the context of psychotherapy, counseling, rehabilitation, or health care” (Malchiodi, 2005, p. 2). Simply put, the arts can be used either on their own or in conjunction with more traditional forms of therapy. Expressive therapies are typically employed as a way of helping clients to gain insight and to express their emotions in a safe and healthy manner.

In the field of expressive therapies, it is believed that the process, meaning the actual act of engaging in the arts, is much more important than the end product that is created. It is for this reason that Pennebaker often encouraged participants to not pay too much attention to things like spelling, grammar, or sentence structure when they were writing about a traumatic event that

they underwent (Pennebaker, 1997). Due to the emphasis that it places on the process rather than the product and the insight and emotional release that it can provide people with, expressive writing can be a very valuable intervention for expressive therapists to use with their clients. In addition to these psychological and emotional benefits, it has been found that expressive writing can provide clients with physical benefits as well.

Expressive Arts Therapy as a Treatment for PTSD

Although writing has been found to be particularly effective in the treatment of posttraumatic stress disorder, it is certainly not the only modality that can help survivors to heal. These benefits can be seen in all sufferers of PTSD, regardless of how or when the disorder developed. For example, a study conducted by Lyshak-Stelzer and colleagues (2007) examined the effectiveness of a trauma-focused art therapy intervention in treating adolescents with PTSD and found that, compared to a control group, those in the experimental group experienced a greater reduction in PTSD-related symptoms. Another qualitative study, conducted by Tuval-Mashiach, Patton, and Drebing (2018), interviewed 50 war veterans who participated in a filmmaking program that allowed them to reflect on their experiences through the creation of short, artistic films. The results of the study revealed that many veterans reported gaining a new sense of agency and being able to process the traumatic event that they experienced. Yoga, which can be considered a type of movement therapy, has also been shown to improve symptoms related to PTSD, due to its ability to increase a person's psychological flexibility, meaning their capacity for mindfulness (Dick et al., 2014). Whether it is through writing, visual art, movement, or any other art form, the expressive therapies can be effective in reducing symptoms related to PTSD.

Expressive Arts Therapy, Meaning Making, and Posttraumatic Growth

Participation in the expressive arts can often lead to a facilitation of the meaning-making process and, consequently, posttraumatic growth, which is a way of healing from PTSD.

According to Malchiodi (2016), posttraumatic growth is when an individual experiences a positive change that is believed to be the result of a traumatic event. Research has identified five general areas that can constitute forms of posttraumatic growth. These categories include 1) developing a sense that new opportunities have been provided, 2) a strengthening of relationships has occurred, including with those who have suffered a trauma, 3) experiencing an increased sense of one's own strength, 4) developing a better appreciation for life in general, and 5) experiencing a deepening of one's spiritual life. Posttraumatic growth is generally achieved by "re-authoring" one's own life story, which can consist of such things as developing a new outlook on life and finding an explanation for why one's life has been altered by trauma or loss. Due to its ability to facilitate the meaning-making process, engaging in the expressive therapies can assist in this "re-authoring" process, thereby proving itself to be an effective method in achieving post-traumatic growth.

Expressive Arts Therapy and Expressive Writing

Expressive arts therapies typically include the modalities of visual arts, music, dance/movement, drama, and writing. Therapists in this field tend to emphasize the process over the product, meaning the quality and end result of the art made is not nearly as important as the act of engaging in the arts itself. In the context of expressive writing, this would mean that the therapist would encourage the client to not worry about spelling, grammar, punctuation and the like, and to instead focus on the content of the writing, which in most expressive writing interventions is the recounting of a traumatic event and the feelings associated with it. Just as the

arts cannot be done in a way that is “wrong” or “right”, expressive writing can be employed in a variety of formats and still be effective in producing a number of physical and mental health benefits.

Variations of Expressive Writing Interventions

The narration of one’s story in some way or another, such as by engaging in the expressive writing process, is frequently used to help survivors with PTSD to heal from the traumatic events that they experienced. One such treatment is known as narrative exposure therapy (NET). According to Sloan and colleagues (2015), NET is a treatment approach in which the trauma survivors provide a narration of their entire life, from birth to present. Narrative exposure therapy is based on both cognitive behavioral techniques for the treatment of PTSD and a treatment approach known as testimony therapy. Testimony therapy was first developed after a group of “former political prisoners in Chile gave testimony of their traumatic experiences, which resulted in diminishing their posttraumatic symptoms” (van Dijk, Schoutrop, & Spinhoven, 2003, p. 361). Testimony therapy and NET are most commonly used with traumatized victims of war and other organized violence, such as refugees (van Dijk, Schoutrop, & Spinhoven, 2003; Sloan et al., 2015). The story that clients? Participants? tell is transcribed as a written document, which can later be read to family and friends or sent to a historical archive (van Dijk, Schoutrop, & Spinhoven, 2003; Sloan et al., 2015).

While comparisons can certainly be drawn between expressive writing and narrative exposure therapy, NET differs in that the participants are not asked to tell about only the traumatic event, but are instead instructed to talk about their entire lives, although emphasis is placed on the experiences that they considered to be traumatic (Sloan et al., 2015). Another significant difference between NET and expressive writing interventions has to do with the level

of involvement of the therapist. Instead of doing the actual writing themselves, clients who participate in NET interventions are guided by the therapist through the narrative process, and the therapist transcribes the verbal account that they give of their life and any traumatic events that they experienced. This could potentially serve as a detriment, because some clients may find it difficult to describe the traumatic event aloud. Also, knowing that the therapist is listening could theoretically influence how much detail the client uses to describe the event, or even whether or not they choose to omit a section entirely. For these reasons, the role of therapist involvement in NET must be explored further.

Cognitive Processing Therapy, Writing, and PTSD

Another type of therapy that uses writing to help survivors heal from traumatic events is cognitive processing therapy (CPT). Cognitive processing therapy, which is a specific type of cognitive behavioral therapy, has also been known to employ expressive writing as a part of its interventions. This specific version of CPT, which has recently been referred to as CPT + Account (CPT + A), includes a written account of the trauma. CPT + A can be especially helpful when trying to reframe a trauma narrative. According to the American Psychological Association (2017), CPT accomplishes this by teaching clients “how to challenge and modify unhelpful beliefs related to the trauma... [and create] a new understanding and conceptualization of the traumatic event so that it reduces its ongoing negative effects on current life” (para. 4). In other words, cognitive processing therapy can help to facilitate the meaning-making process, which will hopefully decrease feelings of cognitive dissonance and, consequently, anxiety.

One recent study, which illustrates the potential benefits of using cognitive processing therapy to treat survivors with PTSD, examined the relationship between reductions in trauma-related negative cognitions, such as self-blame, and a reduction in symptoms of PTSD (Holliday,

Holder and Surís, 2018). After a six-month treatment period, during which time clients were undergoing cognitive processing therapy to reduce trauma-related negative cognitions, the resulting “changes in self-blame predicted and temporally preceded changes in PTSD symptoms, highlighting a potential mechanism of change in CPT for... PTSD” (Holliday, Holder and Surís, 2018, p. 181). Just as the meaning-making process helps to reduce cognitive discrepancies in survivors with PTSD, cognitive processing therapy can be used to reduce cognitive dissonance, such as feelings of self-blame.

Cognitive Reappraisal

Another effective method for reducing cognitive dissonance is known as cognitive reappraisal, which, according to Gross and John (2003), “is a form of cognitive change that involves construing a potentially emotion-eliciting situation in a way that changes its emotional impact” (p. 349). To better elucidate this concept, the authors use the example of an admissions interview; the interviewee can either view the interview as a test of his worth, or he can think of the interview as an opportunity to decide if he likes the school or not. Cognitive reappraisal can lead to the reduction of cognitive dissonance by reappraising a situation that was originally thought to be dissonant, meaning one that does not align with the morals or beliefs of a person and therefore causes them anxiety.

Negative Emotions and Attitude Change

Cancino-Montecinos, Björklund, and Lindholm (2018) found that there is an inverse relationship between negative emotions and attitude change in a situation that is seemingly dissonant, while positive emotions in a dissonant situation are directly correlated with attitude change. The researchers give the example of writing a counter-attitudinal essay. When participants agree to write an essay about a topic that contradicted their previously stated

attitudes, they will try to modify their cognitions in a way that means their behaviors are no longer inconsistent, which they can do by telling themselves that they actually do agree with the content of the essay, or that the essay is not important, so it doesn't matter anyway. By cognitively reappraising a potentially dissonant situation, the person can cause their thoughts and feelings to no longer be inconsistent, thereby reducing any anxious feelings they may be experiencing.

Cognitive reappraisal can also be helpful in reducing the negative emotions associated with events or stimuli that could be considered stressful. When a potentially threatening stimulus or event is cognitively reappraised, a person can not only reduce or even prevent the negative emotions that would have been associated with it, but their perceived ability to cope may also increase when they realize that the stimulus is not as threatening as they originally thought. This in turn makes it more likely that they will be able to overcome the difficult or stressful situation that they were presented with.

Cognitive Reappraisal and PTSD

The cognitive reappraisal of past traumatic events can be just as beneficial as reappraising a current, potentially threatening situation or stimulus. Cognitive reappraisal can often result from engaging in an expressive writing intervention and being able to think about and understand the past traumatic event in a new light. Alparone, Pagliaro, and Rizzo (2015) examined the long-term effect that cognitive reappraisal, which resulted after participating in an expressive writing intervention, could have on a person's anxiety levels. After 70 undergraduate students wrote about either a past painful event or a neutral topic, changes in cognitive linguistic indicators were measured to determine whether cognitive reappraisal had taken place. The researchers determined that engagement in the cognitive reappraisal process, as evidenced by the

increasing use of cognitive mechanism words, plays a mediating role in the reduction of anxiety. Cognitive reappraisal and a subsequent reduction in anxiety is only one of the many benefits of engaging in writing interventions such as the expressive writing paradigm.

Expressive Writing Paradigm

In his 1986 study, Pennebaker instructed forty-six introductory psychology students to write about either a personally traumatic event or trivial topics for four consecutive days (Pennebaker & Beall, 1986). This procedure has come to be known as the expressive writing paradigm and, while often used as a format for other expressive writing interventions, can be modified as needed without reducing its efficacy. For example, Stockton, Joseph, and Hunt (2014) found that expressive writing interventions can take place online and still be effective in fostering posttraumatic growth.

Barak and Leichtentritt (2017) also explored “how writing, and specifically the writing of poetry, facilitates meaning-reconstruction for bereaved parents who are coping with a sudden traumatic loss of a child” (p. 936). For this study, 10 bereaved Israeli parents, who had written poetry about their tragic loss, were interviewed. After analyzing the data, it was determined that writing a dialogue with the deceased, writing an alternative reality, and editing poems and reshaping meanings were three writing interventions that were found to be particularly helpful in allowing participants to find meaning in their tragic loss. The results of the study suggest that “writing in general, and poetry writing in specific... generates new meanings and new emotions that are created through the writing itself” (Barak & Leichtentritt, 2017, p. 947).

Expressive Writing and Negative Affect Arousal

Along with such positive changes as increased psychological resilience, expressive writing can cause a survivor to experience an array of both physical and emotional effects,

which, in the moment, may be viewed as negative by the participant. Although these changes ultimately benefit those who are suffering from PTSD, participating in an expressive writing intervention generally causes people to feel worse immediately following completion of the exercise. This phenomenon was first observed in Pennebaker's (1986) study after analyzing the data from physiological measures, as well as self-reported moods and physical symptoms. The results of the study revealed that immediately after writing about the facts and emotions associated with a traumatic event, participants experienced both an increase in heart rate and a self-reported negative mood. However, a review of health center records revealed that, when compared to the control group, there were fewer visits by the participants in the expressive writing group during the initial 6 months after the study. This would suggest that, while expressive writing can be beneficial to clients with PTSD in the long run, participants may actually experience negative changes in both physiology and affect immediately following the completion of the intervention.

Pascual-Leone and colleagues (2016), who sought to examine negative affect arousal patterns such as the one noted by Pennebaker (1986), also observed an initial increase in negative affect after completion of an expressive writing exercise. The results of the study revealed that those in the expressive writing group experienced an increase in negative affect pre to post testing (meaning within the assigned 15-minute writing period) but a decrease in negative affect from session to session (meaning the 24-hour period between sessions). One explanation offered to explain this pattern of initial increase in negative arousal followed by a subsequent decrease is that during the 15-minute writing period, "an emotional process related to the dynamic construction of new meaning" is taking place (Pascual-Leone et al., 2016, p. 343). In other

words, this pattern of arousal is a result of the client engaging in the meaning-making process and trying to make sense of all that has happened to them.

Expressive Writing and Emotional Self-Regulation

Emotional self-regulation can be defined as “a person’s ability to, within reason, manage and modulate emotional responses- such as to calm oneself after (or even before) becoming upset or angry, to raise a low mood, and to express emotion in a healthy and productive way” (Keene, 2017, para. 1). In the context of expressive writing, this would likely mean not experiencing an increase in anxiety or negative affect in response to being presented with a reminder of the traumatic event. Emotional self-regulation can also be defined as “the ability of an individual to respond appropriately in any given situation, whether it is positive or stressful, and to behave in such a way that is consistent with his or her values, goals, and ongoing best interest” (Keene, 2017, para. 1). This alignment of behaviors and goals could potentially explain why expressive writing can result in a reduction in cognitive dissonance and, therefore, anxiety.

Expressive Writing Vs. Conditioning Methods

Expressive writing, which has been shown to ultimately decrease the negative affect arousal that a conditioned stimulus can create and allowing them to engage in better emotional self-regulation, is not the only method that has been found to be effective in reducing feelings of anxiety. Conditioning methods such as habituation and systematic desensitization can also reduce negative affect arousal through repeated exposure to the conditioned stimulus. Although both expressive writing interventions and interventions that involve some form of conditioning are considered to be effective methods for reducing anxiety, the two types of interventions differ in that the methods used in behavioral and cognitive behavioral approaches do not typically address the underlying cause of the learned negative emotions. According to Mann and Whitfield

(2009), for example, cognitive behavioral therapy does not focus in detail “on the causes of distress or symptoms in the past [but instead] addresses the ways to improve the more immediate state of mind” (p. 25). While this may work well as a temporary fix, failing to address the root cause of a trauma and not taking the time to explore how, aside from increased anxiety, a traumatic event has affected a person, the client will likely never be able to fully heal from the traumatic incident. Addressing only the symptoms of a disorder is essentially like putting a band-aid on a serious physical injury, even though more clearly needs to be done to treat a gravely wounded person. Not only this, but it is also theoretically possible that if the root cause of anxiety is not addressed, another new symptom will take the place of the old one, as these emotions need to be released in some way or another.

Emotional Suppression and Negative Health Effects

When strong emotions, such as the fear and anger associated with a traumatic event or a conditioned stimulus, are not expressed but instead suppressed, detrimental physiological and psychological effects can result. Research has shown, for example, that the use of emotional suppression by adolescents was inversely correlated with both mental health, which included depression and anxiety, and social wellbeing, as measured by levels of peer victimization, friendship satisfaction, and family satisfaction (Chervonsky & Hunt, 2019). Another study found that the suppression of emotions impaired later performance on another task requiring control, which was measured by scores on the Stroop task (Friese et al., 2013). There was found to be an initial increase in prefrontal cortex activity during the first instance of emotional suppression, followed by a relative decrease in activity while completing the Stroop task. This would suggest that the suppression of emotion can make it more difficult for a person to control themselves

later on. This could help to explain why expressive writing, which allows the client to express his emotions in a safe and healthy manner, can improve a person's capacity for emotional regulation.

Emotional suppression and, conversely, the healthy expression of emotions can result in respective negative and positive physiological changes. For example, Tuck, Adams, and Consedine (2017) found that an increased ability to enhance expressions of sadness, as measured by a FACS-based Noldus FaceReader, was associated with a higher heart rate variability, which can be a predictor of such features of psychological wellbeing as prosocial behavior and improved mood (Kass & Trantham, 2014). The results of the study also revealed that the ability to enhance expressions of joy was associated with the presence of fewer physical symptoms such as headaches and heart trouble (Tuck, Adams, & Consedine, 2017). This would suggest that the suppression and expression of emotions can result in both physiological and psychological changes that can influence a person's wellbeing.

Physiological Benefits of Expressive Writing

Expressive writing has been shown to result in several powerful and long-term physiological health benefits, in part due to its ability to improve a person's capacity to self-regulate. Multiple studies, for example, have found that engaging in expressive writing can result in improved immune functioning (Pennebaker, Kiecolt-Glaser, & Glaser, 1988; Booth et al., 1997; Petrie et al., 1995). Others have reported physiological changes in functioning, such as changes in the parasympathetic nervous system and reduced physiological responses to reminders of the trauma, as a result of engaging in the expressive writing process (Sheerin et al., 2018; Smyth, Hockemeyer, and Tulloch, 2008). It is suggested that this change in physiological measures over time is due to the person's increased ability to engage in more self-regulation after participating in an expressive writing intervention (Sheerin et al., 2018). Research conducted by

Lepore and colleagues (2002) also supports this theory, stating that “expressive writing can improve regulation of emotion-related experience, physiological responses, and behaviors, which, in turn, can enhance physical and mental health outcomes” (p. 99).

Cognitive Reappraisal, Expressive Suppression, and Emotion Regulation

Another commonly used method that has been found to aid in the regulation of emotions is cognitive reappraisal. Cognitive reappraisal is frequently studied alongside other emotion regulation strategies, such as expressive suppression. Specifically, the effect that cognitive reappraisal and expressive suppression can have on emotion regulation has been researched extensively over the years (Fucito, Juliano, & Toll, 2010; Cutuli, 2014; Dryman & Heimberg, 2018). Expressive suppression can be defined as “a form of response modulation that involves inhibiting ongoing emotion-expressive behavior” (Gross & John, 2003, p. 349). Research has shown that expressive-suppression is negatively related to well-being, while the use of cognitive reappraisal is positively related. For example, Gross and John (2003) found that those who engaged in cognitive reappraisal experienced and expressed greater positive emotion and less negative emotion, and displayed better interpersonal functioning, whereas expressive-suppression was found to have the opposite effect. This would suggest that cognitive reappraisal is a more effective method than expressive suppression when it comes to the regulation of emotions. It also speaks to the importance of expressing one’s emotions, either through writing or some other form of expression.

Conclusion

Expressive writing, its many physiological and psychological benefits, and its effectiveness in treating PTSD-related symptoms have been studied extensively over the years (Pennebaker & Beall, 1986; Pennebaker, 1997; Stockton, Joseph, & Hunt, 2014; Alparone, Pagliaro, & Rizzo, 2015; Barak & Leichentritt, 2017; Pascual-Leone et al., 2016, Pennebaker, Kiecolt-Glaser, & Glaser, 1988; Booth et al., 1997; Petrie et al., 1995, Sheerin et al., 2018; Smyth, Hockemeyer, and Tulloch, 2008, Lepore et al., 2002). For example, it has been found that participating in expressive writing interventions can result in fewer visits to the health center and an improvement in immune functioning (Pennebaker & Beall, 1986; Pennebaker, Kiecolt-Glaser, & Glaser, 1988; Booth et al., 1997; Petrie et al., 1995). Also, because expressive writing can potentially be an effective method for releasing the cortisol sometimes stored in the body after a trauma, it can lead to a reduced risk of type II diabetes, obesity, and even dying from cancer. Reduced cortisol levels could also result in slower progression of Alzheimer's disease.

Just as powerful as the positive physiological benefits that can be produced from engaging in an expressive writing intervention are the psychological effects that it can result in. As Pennebaker (1986), Pascual-Leone (2016), and Keene (2017) have highlighted, expressive writing can result in a reduction in anxiety and an improved ability to regulate emotions. One explanation for why this reduction in anxiety occurs is that it allows the client to go through the habituation process, which is a technique commonly employed by cognitive behavioral therapists. This reduction in anxiety can be the result of helping the client to either no longer overestimate the threat associated with a certain stimulus, or to no longer underestimate their ability to properly deal with the threat.

Systematic desensitization, which is most commonly used by behavioral therapists, can also be used to reduce feelings of anxiety. This technique uses counterconditioning methods to reduce negative feelings associated with a certain stimulus, as well as replace those previously negative feelings with positive ones. However, methods such as these are limited in that they tend to only focus on the current symptomology and do not discuss in detail what the root cause of the client's fear is. This can be detrimental, not only because other behaviors may take the place of the one's that the therapist conditions away, but also because the traumatic event needs to be processed and understood in a way that makes sense to the client before the client is able to heal and grow from the trauma.

Cognitive processing therapy + account (CPT + A) is an intervention that employs a cognitive approach while still utilizing the expressive writing paradigm to help a client make sense of what happened to them and reduce the feelings of anxiety that they may be experiencing. Several other interventions have also modified the expressive writing paradigm, which was a method first developed by Pennebaker in 1986, and still found it to be effective. Expressive writing can be done in a poetry format, for instance, or even online.

Expressive writing, no matter what way it's done, can result in improved psychological resilience, meaning people will be better able to cope when faced with stressful or frightening situations. This increased psychological resilience may be a result of cognitive reappraisal, which can decrease feelings of anxiety created when a person experiences cognitive dissonance. It can also play a large role in the meaning-making process. The facilitation of the meaning-making process is part of the reason why expressive writing is thought to be effective in aiding survivors of traumatic events to grow and heal from PTSD. The meaning-making process, which helps survivors to make sense of the traumatic events that they were forced to endure, can result in a

reduction of cognitive discrepancies. These cognitive discrepancies are often caused because a client believes that it is their fault the trauma occurred. Engaging in the meaning-making process can rid the client of these self-blaming tendencies, thereby reducing the feelings of anxiety associated with it.

Although expressive writing interventions cause the client to experience an initial increase in negative affect, as well as a physiological response during which the client is likely undergoing the habituation process, the benefits of expressive writing far outweigh the negative effects that are associated with it. By facilitating the meaning-making process, expressive writing can be an effective way of helping survivors of traumatic events to grow and heal from PTSD. For these reasons, it is suggested that expressive writing be utilized much more frequently than it currently is, and more people be educated about its many and powerful benefits.

Drawbacks of Expressive Writing

All psychological interventions, no matter how successful or popular they are, have their drawbacks, and expressive writing is no exception. For example, the feelings of negative arousal that the expressive writing paradigm has been found to create can bring up a lot of powerful emotions for people. Not only does the client have to be prepared to deal with these emotions, but the therapist must also be able to recognize and properly handle a situation in which these feelings can become overwhelming for the client. Also, if the intervention is completed in a group setting, seeing such strong reactions might trigger some of the other clients. These are important things to keep in mind when considering using an expressive writing intervention, as they could potentially be detrimental to a client. However, while there are admittedly a few drawbacks associated with participating in an expressive writing intervention, the abundance of

studies speaking to its efficacy and benefits would suggest that the pros far outweigh the cons, and that expressive writing can be helpful in the treatment of posttraumatic stress disorder.

Implications for Future Research

More and more research is being done on the uses and effectiveness of expressive writing interventions. PTSD and the meaning-making process have both been studied extensively on their own as well. However, there is a gap in the literature in that not nearly enough research has been done concerning what the exact relationship is among the three and the theories behind why expressive therapy works in the way that it does. For example, why does simply writing about a trauma help people to make sense of it? If a client has already made sense of the trauma they've undergone, would the expressive writing intervention still be effective? What causes the shift in thinking that results in the clients no longer blaming themselves? If a client does not feel comfortable with the therapist, will they still be willing to provide their true and unedited feelings?

More research also needs to be carried out with regards to the theories behind the effectiveness of expressive writing, as there are many unanswered questions that still need to be addressed, such as the role that catharsis plays, more detailed information on what physiological changes take place when a person is experiencing negative arousal, and any differences in brain chemistry, in either the short- or long-term, that can occur after participating in an expressive writing intervention? All these questions and more need to be considered before this particular form of expressive arts therapy can be truly understood. Once they are, however, expressive writing and its benefits can hopefully be utilized to its fullest extent.

References

- American Psychological Association. (2017). PTSD Treatments. Retrieved from <https://www.apa.org/ptsd-guideline/treatments/index>
- American Psychological Association. (2017). What Is Posttraumatic Stress Disorder? Retrieved from <https://www.psychiatry.org/patients-families/ptsd/what-is-ptsd>
- Barak, A., & Leichtentritt, R. D. (2017). Creative writing after traumatic loss: Towards a generative writing approach. *British Journal of Social Work, 47*(3), 936–954.
- Booth, R. J., Petrie, K. J., & Pennebaker, J. W. (1997). Changes in circulating lymphocyte numbers following emotional disclosure: evidence of buffering?. *Stress medicine, 13*(1), 23-29.
- Bootzin, R. R. (1975). *Behavior modification and therapy: An introduction*. Cambridge, MA: Winthrop Publ.
- Cancino-Montecinos, S., Björklund, F., & Lindholm, T. (2018). Dissonance reduction as emotion regulation: Attitude change is related to positive emotions in the induced compliance paradigm. *Plos One, 13*(12). doi:10.1371/journal.pone.0209012
- Cannon, W., B. (1915). *Bodily changes in pain, hunger, fear, and rage*. New York: Appleton Century-Crofts.
- Chervonsky, E., & Hunt, C. (2019). Emotion regulation, mental health, and social wellbeing in a young adolescent sample: A concurrent and longitudinal investigation. *Emotion, 19*(2), 270-282. doi:10.1037/emo0000432
- Cutuli D. (2014). Cognitive reappraisal and expressive suppression strategies role in the emotion regulation: an overview on their modulatory effects and neural correlates. *Frontiers in systems neuroscience, 8*, 175. doi:10.3389/fnsys.2014.00175

- Delahanty, D. L., Nugent, N. R., Christopher, N. C., & Walsh, M. (2005). Initial urinary epinephrine and cortisol levels predict acute PTSD symptoms in child trauma victims. *Psychoneuroendocrinology*, *30*(2), 121-128.
doi:10.1016/j.psyneuen.2004.06.004
- Dick, A. M., Niles, B. L., Street, A. E., DiMartino, D. M., & Mitchell, K. S. (2014). Examining mechanisms of change in a yoga intervention for women: the influence of mindfulness, psychological flexibility, and emotion regulation on PTSD symptoms. *Journal Of Clinical Psychology*, *70*(12), 1170–1182. <https://doi-org.ezproxyles.flo.org/10.1002/jclp.22104>
- Dryman, M. T., & Heimberg, R. G. (2018). Emotion regulation in social anxiety and depression: A systematic review of expressive suppression and cognitive reappraisal. *Clinical Psychology Review*, *65*, 17-42. doi:10.1016/j.cpr.2018.07.004
- Engelhard, I. M., Leer, A., Lange, E., & Olatunji, B. O. (2014). Shaking That Icky Feeling: Effects of Extinction and Counterconditioning on Disgust-Related Evaluative Learning. *Behavior Therapy*, *45*(5), 708-719. doi:10.1016/j.beth.2014.04.003
- Evans, J. F., Ed.D. (2012, August 15). Expressive Writing. Retrieved from <https://www.psychologytoday.com/us/blog/write-yourself-well/201208/expressive-writing>
- Farber, S. K., Ph.D. (2016, March 28). Expressive Writing for Physical and Mental Health. Retrieved from <https://www.psychologytoday.com/us/blog/the-mind-body-connection/201603/expressive-writing-physical-and-mental-health>
- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.
- Freda, M. F., & Martino, M. L. (2015). Health and Writing: Meaning-Making Processes in the

- Narratives of Parents of Children With Leukemia. *Qualitative Health Research*, 25(3), 348-359. doi:10.1177/1049732314551059
- Friese, M., Binder, J., Luechinger, R., Boesiger, P., & Rasch, B. (2013). Suppressing Emotions Impairs Subsequent Stroop Performance and Reduces Prefrontal Brain Activation. *PLoS ONE*, 8(4). doi:10.1371/journal.pone.0060385
- Fucito, L. M., Juliano, L. M., & Toll, B. A. (2010). Cognitive Reappraisal and Expressive Suppression Emotion Regulation Strategies in Cigarette Smokers. *Nicotine & Tobacco Research*, 12(11), 1156-1161. doi:10.1093/ntr/ntq146
- Gan, Y., Zheng, L., Wang, Y., & Li, W. (2018). An extension of the meaning making model using data from Chinese cancer patients: The moderating effect of resilience. *Psychological Trauma: Theory, Research, Practice, and Policy*, 10(5), 594-601. doi:10.1037/tra0000325
- Gast, A., & De Houwer, J. (2013). The influence of extinction and counterconditioning instructions on evaluative conditioning effects. *Learning and Motivation*, 44(4), 312-325. <http://dx.doi.org/10.1016/j.lmot.2013.03.003>
- Gross, J. J., & John, O. P. (2003). Individual differences in two emotion regulation processes: Implications for affect, relationships, and well-being. *Journal of Personality and Social Psychology*, 85(2), 348-362. doi:10.1037/0022-3514.85.2.348
- Hass-Cohen, N., Bokoch, R., Clyde Findlay, J., & Banford Witting, A. (2018). Research Article: A four-drawing art therapy trauma and resiliency protocol study. *The Arts in Psychotherapy*, 61, 44–56. <https://doi-org.ezproxyles.flo.org/10.1016/j.aip.2018.02.003>
- Heller, N., & Northcut, T. (2011). The Integration of Psychodynamic and Cognitive Behavior. In J. Berzoff, L. M. Flanagan, & Patricia Hertz (eds.), *Inside Out and Outside In:*

- Psychodynamic Clinical Theory and Psychopathology in Contemporary Multicultural Contexts* (pp. 179-188). Plymouth, UK: Rowman & Littlefield Publishers, Inc.
- Herman, J. L. (1992). Complex PTSD: A syndrome in survivors of prolonged and repeated trauma. *Journal of Traumatic Stress, 5*(3), 377-391. doi:10.1007/bf00977235
- Hirai, M., Skidmore, S. T., Clum, G. A., & Dolma, S. (2012). An Investigation of the Efficacy of Online Expressive Writing for Trauma-Related Psychological Distress in Hispanic Individuals. *Behavior Therapy, 43*(4), 812-824. doi:10.1016/j.beth.2012.04.006
- Holliday, R., Holder, N., & Surís, A. (2018). Reductions in self-blame cognitions predict PTSD improvements with cognitive processing therapy for military sexual trauma-related PTSD. *Psychiatry Research, 263*, 181-184. doi:10.1016/j.psychres.2018.03.007
- Iida, A. (2017). Living in Darkness at the Time of the Great East Japan Earthquake: A Poetic Narrative Autoethnography. *Qualitative Inquiry, 24*(4), 270-280. doi:10.1177/1077800417745917
- Jackson, S. E., & Steptoe, A. (2018). Obesity, perceived weight discrimination, and hair cortisol: A population-based study. *Psychoneuroendocrinology, 98*, 67-73. doi:10.1016/j.psyneuen.2018.08.018
- Janoff-Bulman, R. (1989). Assumptive worlds and the stress of traumatic events: Applications of the schema construct. *Social Cognition, 7*(2), 113-136. doi:10.1521/soco.1989.7.2.113
- Kang, S., Vervliet, B., Engelhard, I. M., Dis, E. A., & Hagenaars, M. A. (2018). Reduced return of threat expectancy after counterconditioning versus extinction. *Behaviour Research and Therapy, 108*, 78-84. doi:10.1016/j.brat.2018.06.009
- Kass, J. D., & Trantham, S. M. (2014). Perspectives from Clinical Neuroscience: In *Mindfulness and the Arts Therapies: Theory and Practice*. Philadelphia, PA: Kingsley.

Keene, B. M. (2017). Emotion self-regulation. *Salem Press Encyclopedia*.

Kessler, R. C., Aguilar-Gaxiola, S., Alonso, J., Benjet, C., Bromet, E. J., Cardoso, G., Degenhardt, L., de Girolamo, G., Dinolova, R. V., Ferry, F., Florescu, S., Gureje, O., Haro, J. M., Huang, Y., Karam, E. G., Kawakami, N., Lee, S., Lepine, J. P., Levinson, D., Navarro-Mateu, F., Pennell, B. E., Piazza, M., Posada-Villa, J., Scott, K. M., Stein, D. J., Have, M., T., Torres, Y., Viana, M. C., Petukhova, M. V., Sampson, N. A., Zaslavsky, A. M., & Koenen, K. C. (2017). Trauma and PTSD in the WHO World Mental Health Surveys. *European journal of psychotraumatology*, 8(5), 1353-383.
doi:10.1080/20008198.2017.1353383

Lepore, S. J., Greenberg, M. A., Bruno, M., & Smyth, J. M. (2002). Expressive writing and health: Self-regulation of emotion-related experience, physiology, and behavior. In *The writing cure: How expressive writing promotes health and emotional well-being*. (pp. 99-117). Washington, DC: American Psychological Association.
<https://doiorg.ezproxyles.flo.org/10.1037/10451-005>

Lyshak-Stelzer, F., Singer, P., St. John, P., & Chemtob, C. M. (2007). Art Therapy for Adolescents with Posttraumatic Stress Disorder Symptoms: A Pilot Study. *Art Therapy: Journal of the American Art Therapy Association*, 24(4), 163–169. Retrieved from <http://ezproxyles.flo.org/login?url=https://search.ebscohost.com/login.aspx?direct=true&db=eric&AN=EJ791440&site=eds-live&scope=site>

Malchiodi, C. A. (2005). *Expressive therapies*. New York: Guilford.

Malchiodi, C. (2016, September 27). Expressive Arts Therapies and Posttraumatic Growth. Retrieved from <https://www.psychologytoday.com/us/blog/arts-and-health/201609/expressive-arts-therapies-and-posttraumatic-growth>

- Mann, N. & Whitfield, G. (2009). Professional skills: an introduction to cognitive-behavioural therapy for anxiety disorders. *Mind II, the Foundation Years*, 5(1).
- Mastroianni, B. (2018, April 16). PTSD Signs, Symptoms, and Diagnosis: What to Know | Everyday Health. Retrieved from <https://www.everydayhealth.com/ptsd/guide/symptoms/>
- Ortiz, R., Kluwe, B., Odei, J. B., Tcheugui, J. B., Sims, M., Kalyani, R. R., Bertoni, A.G., Golden, S. H., & Joseph, J. J. (2019). The association of morning serum cortisol with glucose metabolism and diabetes: The Jackson Heart Study. *Psychoneuroendocrinology*, 103, 25-32. doi:10.1016/j.psyneuen.2018.12.237
- Pacella, M. L., Hruska, B., Steudte-Schmiedgen, S., George, R. L., & Delahanty, D. L. (2017). The utility of hair cortisol concentrations in the prediction of PTSD symptoms following traumatic physical injury. *Social Science & Medicine*, 175, 228-234. doi:10.1016/j.socscimed.2016.12.046
- Park, C. L., & Blumberg, C. J. (2002). Disclosing Trauma Through Writing: Testing the Meaning Making Hypothesis. *Cognitive Therapy and Research*, 26(5), 597-616. doi: 10.1023/A:1020353109229 }
- Pascual-Leone, A., Yeryomenko, N., Morrison, O.-P., Arnold, R., & Kramer, U. (2016). Does Feeling Bad, Lead to Feeling Good? Arousal Patterns During Expressive Writing. *Review of General Psychology*, 20(3), 336–347. <https://doi.org.ezproxyles.flo.org/10.1037/gpr0000083>
- Pennebaker, J. W. (1997). Writing about emotional experiences as a therapeutic process. *Psychological Science*, 8, 162-166.
- Pennebaker, J. W., & Beall, S. K. (1986). Confronting a traumatic event: Toward an understanding of inhibition and disease. *Journal of Abnormal Psychology*, 95(3), 274-

281. doi:10.1037//0021-843x.95.3.274

Pennebaker, J.W., Kiecolt-Glaser, J., & Glaser, R. (1988). Disclosure of traumas and immune function: Health implications for psychotherapy. *Journal of Consulting and Clinical Psychology, 56*, 239-245.

Petrie, K. J., Booth, R. J., Pennebaker, J. W., Davison, K. P., & Thomas, M. G. (1995). Disclosure of trauma and immune response to a hepatitis B vaccination program. *Journal of Consulting and Clinical Psychology, 63*(5), 787-792.

Popp, J., Wolfsgruber, S., Heuser, I., Peters, O., Hüll, M., Schröder, J., Möller, H.J., Lewczuk, P., Schneider, A., Jahn, H., Luckhaus, C., Pernecky, R., Frölich, L., Wagner, M., Maier, W., Wiltfang, J., Kornhuber, J., Jessen, F. (2015). Cerebrospinal fluid cortisol and clinical disease progression in MCI and dementia of Alzheimer's type. *Neurobiology of Aging, (2)*, 601-607. <https://doi.org/10.1016/j.neurobiolaging.2014.10.031>

Ringel, S., & Brandell, J. R. (2012). *Trauma: Contemporary directions in theory, practice, and research*. Thousand Oaks, CA: SAGE Publications.

Schrepf, A., Thaker, P. H., Goodheart, M. J., Bender, D., Slavich, G. M., Dahmouh, L., Penedo, F., DeGeest, K., Mendez, L., Lubaroff, D. M., Cole, S. W., Sood, A. K., Lutgendorf, S. K. (2015). Diurnal cortisol and survival in epithelial ovarian cancer.

Psychoneuroendocrinology, 53, 256–267. <https://doi.org/10.1016/j.psyneuen.2015.01.010>

Seltzer, L. F., Ph.D. (2015, July 08). Trauma and the Freeze Response: Good, Bad, or Both?

Retrieved from <https://www.psychologytoday.com/us/blog/evolution-the-self/201507/trauma-and-the-freeze-response-good-bad-or-both>

Sheerin, C. M., Konig, A., Eonta, A. M., & Vrana, S. R. (2018). Effect of expressive and neutral writing on respiratory sinus arrhythmia response over time. *Journal of Behavior Therapy*

- and Experimental Psychiatry*, 59, 129-133. <http://dx.doi.org/10.1016/j.jbtep.2018.01.003>
- Slatcher, R.B. & Pennebaker, J.W. (2006). How do I love thee? Let me count the words: The social effects of expressive writing. *Psychological Science*, 17, 660-664.
- Sloan, D. M., Sawyer, A. T., Lowmaster, S. E., Wernick, J., & Marx, B. P. (2015). Efficacy of Narrative Writing as an Intervention for PTSD: Does the Evidence Support Its Use?. *Journal of contemporary psychotherapy*, 45(4), 215-225.
- Smyth, J. M., Hockemeyer, J. R., & Tulloch, H. (2008). Expressive writing and post-traumatic stress disorder: Effects on trauma symptoms, mood states, and cortisol reactivity. *British Journal of Health Psychology*, 13(1), 85-93. doi:10.1348/135910707x250866
- Spera, S.P., Buhrfeind, E.D., & Pennebaker, J.W. (1994). Expressive writing and coping with job loss. *Academy of Management Journal*, 37, 722-733.
- Steger, M. F., & Park, C. L. (2012). The creation of meaning following trauma: Meaning making and trajectories of distress and recovery. *Trauma Therapy in Context: The Science and Craft of Evidence-based Practice.*, 171-191. doi:10.1037/13746-008
- Stockton, H., Joseph, S., & Hunt, N. (2014). Expressive writing and posttraumatic growth: An Internet-based study. *Traumatology: An International Journal*, 20(2), 75–83. <https://doi.org.ezproxyles.flo.org/10.1037/h0099377>
- Terr, L. C. (1991). Childhood Traumas: An Outline and Overview. *American Journal of Psychiatry*, 148(1), 10-20. doi:10.1176/foc.1.3.322
- Tuck, N. L., Adams, K. S., & Consedine, N. S. (2017). Does the ability to express different emotions predict different indices of physical health? A skill-based study of physical symptoms and heart rate variability. *British Journal of Health Psychology*, 22(3), 502-523. doi:10.1111/bjhp.12242

- Tuval-Mashiach, R., Patton, B.W., & Drebing, C. (2018). "When You Make a Movie, and You See Your Story There, You Can Hold It": Qualitative Exploration of Collaborative Filmmaking as a Therapeutic Tool for Veterans. *Frontiers in Psychology*.
<https://doi.org/10.3389/fpsyg.2018.01954>
- Van der Kolk, B. A. (2005). Developmental Trauma Disorder: Toward a rational diagnosis for children with complex trauma histories. *Psychiatric Annals*, 35(5), 401-408.
doi:10.3928/0048571320050501-06
- Van Dijk, J. A., Schoutrop, M. J., & Spinhoven, P. (2003). Testimony Therapy: Treatment Method for Traumatized Victims of Organized Violence. *American Journal of Psychotherapy*, 57(3), 361-373. doi:10.1176/appi.psychotherapy.2003.57.3.361
- Weiskittle RE, & Gramling SE. (2018). The therapeutic effectiveness of using visual art modalities with the bereaved: a systematic review. *Psychology Research and Behavior Management*, 9. Retrieved from <https://search-ebsohost-com.ezproxyles.flo.org/login.aspx?direct=true&db=edsdoj&AN=edsdoj.860bf4e8bcd043f6b0cfef6234b5e7a8&site=eds-live&scope=site>